

```
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import datetime as dt
```

```
import plotly.graph_objects as go
import plotly.io as pio
import plotly.express as px
```

block 2

```
president_counties_df = pd.read_csv('../input/us-election-2020/president_county_candidate.csv')
total_votes_df =
president_counties_df.groupby('candidate')['total_votes'].sum().reset_index().sort_values(by='total_votes',ascending=False)
```

block 3

```
df = total_votes_df.sort_values(by='total_votes')
fig1 = px.bar(df, x='total_votes', y='candidate', orientation='h')
fig1.update_layout(template='simple_white', height=800)
fig1.show()
```

block 4

```
df = total_votes_df.sort_values(by='total_votes')
df['text'] = df.apply(lambda x: x['candidate'] + ' ' + "{:,}".format(x['total_votes']), axis=1)
fig1 = px.scatter(df, x='total_votes', y='candidate', log_x=True, text='text')
fig1.update_traces(textposition='middle right')
fig1.update_layout(template='simple_white', height=800, yaxis = dict(showticklabels = False))
fig1.show()
```

block 5

```
filt = (president_counties_df['won'] == True) # & (president_counties_df['candidate'].isin(['Joe Biden','Donald Trump']))
counties_won_df = president_counties_df.loc[filt]
counties_won_df.groupby('candidate')['county'].count().reset_index()
```

block 6

```
len(president_counties_df.groupby(['state','county']).count())
```

block 7

```
president_counties_pivot = president_counties_df[president_counties_df['candidate'].isin(['Joe Biden','Donald Trump'])].pivot_table(index=['state','county'],columns='candidate',values='total_votes',aggfunc='sum')
```

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